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Enhancement of the antibacterial activity of an *E. faecalis* strain by the heterologous expression of enterocin A

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Highlights

- An allelic exchange method was used to clone the enterocin A in an *E. faecalis* strain.
- Recombinant *E. faecalis* does not require inducers to express enterocin A.
- The modified strain was active against *S. aureus*, *L. monocytogenes* and *E. faecalis*.
- The modified enterococcal strain reduced two-log of *Listeria* counts in co-culture.
- The improved strain is useful in food due to its metabolic and antibacterial traits.

Abstract

The genus *Enterococcus* occurs as native microbiota of fermented products due to its broad environmental distribution and its resistance to salt concentrations. *Enterococcus faecalis* F, a non-pathogenic strain isolated from a ripened cheese, has demonstrated useful enzymatic capabilities, a probiotic behavior and antibacterial activity against some food-borne pathogens, mainly due to peptidoglycan hydrolase activity. Its use as a natural pathogen-control agent could be further enhanced through the production of a bacteriocin, *e.g.* Enterocin A, because of its

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